

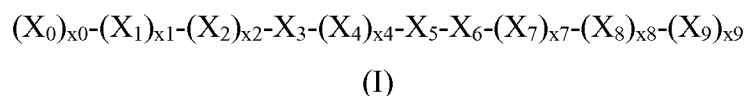
**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claims 1-18 (canceled)

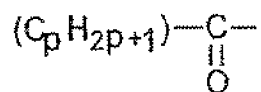
Claim 19 (previously presented): A molecule of general formula (I), and the pharmaceutically acceptable salts thereof:



in which

- x0, x1, x2, x4, x7, x8 and x9 each represent, independently, an integer equal to 0 or to 1;

-X<sub>0</sub> represents a group:



with p ranging from 3 to 23;

-X<sub>1</sub> and X<sub>3</sub> each represent a natural or synthetic amino acid in the L or D configuration, each comprising at least one hydroxyl function on its side chain;

-X<sub>2</sub> represents a natural or synthetic amino acid in the L or D configuration chosen from those comprising an alkyl side chain;

-X<sub>4</sub> represents a natural or synthetic amino acid in the L or D configuration chosen from those comprising an aromatic side chain;

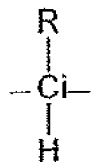
-X<sub>5</sub> represents an amino acid in the L or D configuration chosen from lysine, arginine, histidine, aspartic acid, asparagine, glutamic acid and glutamine;

-X<sub>6</sub> represents an amino acid in the L or D configuration chosen from tyrosine, phenylalanine, leucine, isoleucine, alanine, *para*-benzoylphenylalanine and lysine;

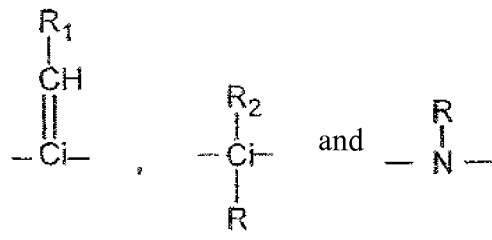
- X<sub>7</sub> represents an amino acid in the L or D configuration chosen from glycine, alanine, leucine, valine, asparagine and arginine;
- X<sub>8</sub> represents an amino acid in the L or D configuration chosen from proline, valine, isoleucine and aspartic acid;
- X<sub>9</sub> represents an amino acid in the L or D configuration chosen from serine, alanine, lysine, arginine and tryptophan;
- the bond between two successive amino acids X<sub>i</sub>-X<sub>i+1</sub>, denoted q<sub>i to i+1</sub>, i = 1 to 8 can be a peptide

bond  $\begin{array}{c} \text{O} \\ || \\ -\text{C}-\text{NH}- \end{array}$  or a pseudopeptide bond chosen from: CO-O, CO-S, CO-CH<sub>2</sub>, CO-N(Me), NH-CO, CH=CH, CH<sub>2</sub>-CH<sub>2</sub>, CH<sub>2</sub>-S, CH<sub>2</sub>-O, CS-NH, CH<sub>2</sub>-NH, CO-CH<sub>2</sub>-NH, CO-NH-NH, CO-NH-N= and CO-N(NH<sub>2</sub>);

- the amino acids stated above X<sub>i</sub>, i = 1 to 9 being capable of comprising a modification of their α-carbon, denoted C<sub>i</sub>, i = 1 to 9 and bearing the side chain R of the amino acid, which modification consisting of the replacement of:



with a group chosen from:



- the groups R and CH-R<sub>1</sub> representing the side chain of the amino acid and R<sub>2</sub> representing a C<sub>1</sub>-C<sub>6</sub> alkyl group; R-R<sub>2</sub> can constitute a ring,
- the pseudopeptides of the invention also corresponding to the following conditions:
- x<sub>0</sub> is equal to 1
- or
- one of the bonds q<sub>i to i+1</sub>, i = 1 to 8 is a pseudopeptide bond

or

one of the  $C_i$ ,  $i = 1$  to 9 comprises one of the modifications stated above, wherein said molecule of formula (I) is capable of modulating the proteasome.

Claim 20 (previously presented): The molecule as claimed in claim 19, wherein one or more of the following conditions is verified:

at least one of the integers  $x_0$ ,  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_7$ ,  $x_8$  and  $x_9$  is equal to 1;

$X_1$  and  $X_3$ , which may be identical or different, are chosen from threonine and serine;

$X_2$  is chosen from valine, leucine and isoleucine; or

$X_4$  is chosen from phenylalanine, tryptophan, tyrosine and *para*-benzoylphenylalanine.

Claim 21 (previously presented): The molecule as claimed in claim 20, comprising 4 to 8 amino acids.

Claim 22 (previously presented): A molecule as claimed in claims 19 to 21, wherein  $x_0 = 1$ .

Claim 23 (canceled)

Claim 24 (previously presented): The molecule as claimed in claim 19, wherein one or more of the following conditions are verified:

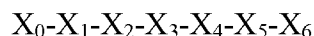
-at least one of  $X_1$  and of  $X_3$  represents threonine,

- $X_2$  is chosen from isoleucine and valine,

- $X_4$  is chosen from phenylalanine, tyrosine and *para*-benzoylphenylalanine, or

-at least 2 of the integers  $x_0$ ,  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_7$ ,  $x_8$  and  $x_9$  are equal to 1.

Claim 25 (previously presented): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ia):



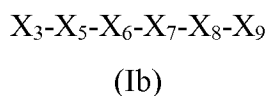
(Ia)

in which the bonds  $q_{i \text{ to } i+1}$  between the amino acids  $X_i$  and  $X_{i+1}$ ,  $i = 1$  to 5 are peptide or pseudopeptide bonds.

Claim 26 (canceled)

Claim 27 (canceled)

Claim 28 (previously presented): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ib):



in which:

- at least one of the bonds between two successive amino acids is a pseudopeptide bond,
- or
- one of the  $\alpha$ -carbons of one of the amino acids is a modified  $\alpha$ -carbon.

Claim 29 (currently amended): The molecule as claimed in claim 19, wherein the molecule is:

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTYDY with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TISYDY with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVSYKF with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TITFDY with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TITYKF with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TITYEY with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TITYDF with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTYKL with n=4, 6, 8, 10, 12, 14, 16, 18;  
CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTYKY with n=4, 6, 8, 10, 12, 14, 16, 18;

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTFKF with n=4, 6, 8, 10, 12, 14, 16, 18;

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TITYDL with n=4, 6, 8, 10, 12, 14, 16, 18;

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTFDY with n=4, 6, 8, 10, 12, 14, 16, 18;

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTFKF with n=4, 6, 8, 10, 12, 14, 16, 18;

CH<sub>3</sub>-(C<sub>n</sub>H<sub>2n</sub>)-CO-TVTYKF with n=4, 6, 8, 10, 12, 14, 16, 18;

TNL\*GPS;

SEK\*RVW;

TRA\*LVR;

SNL\*NDA; or

THI\*VIK;

~~Ava represents a  $\delta$ -aminovaleric acid group,~~

~~Bpa represents a *para*-benzoylphenylalanine group; and~~

wherein \* represents:

- a bond chosen from ester, thioester, keto methylene, keto methyleneamino, N-methylamide, inverse amide, Z/E vinylene, ethylene, methylenethio, methyleneoxy, thioamide, methyleneamino, hydrazino, carbonylhydrazone and N-amino bonds, or
- the presence of an aza-amino acid as a substitution for one of the amino acids adjacent to \*.

Claim 30 (previously presented): The molecule as claimed in claim 19 coupled on its C-terminal end and/or on its N-terminal end with another molecule which promotes its bioavailability.

Claim 31 (previously presented): A composition comprising the molecule as claimed in claim 19 in a pharmaceutically acceptable carrier.

Claim 32 (currently amended): A method for ~~prevention and~~ treatment of a disorder or a pathology associated with proteasome activity comprising administering to an animal in need thereof a molecule as claimed in claim 19.

Claim 33 (currently amended): The method ~~of as claimed in~~ claim 32, wherein the disorder or pathology is selected from: cancers involving hematological tumors or solid tumors; autoimmune diseases; AIDS; inflammatory diseases; ~~cardiac pathologies; pathologies associated with the consequences of ischemic processes at the myocardial, cerebral or pulmonary level;~~ allograft rejection; and amyotrophy; ~~cerebral strokes; traumas; burns; and pathologies associated with aging.~~

Claim 34 (previously presented): A method for radiosensitizing a tumor comprising contacting the tumor with a compound as claimed in claim 19.

Claim 35 (previously presented): A cosmetic and/or dermatological composition comprising a molecule as claimed in claim 19, in a cosmetically and/or dermatologically acceptable carrier.

Claim 36 (previously presented): A cosmetic process for preventing or treating the appearance of effects of chronological skin aging and/or of photoaging, comprising applying to skin the molecule as claimed in claim 19 in a cosmetically acceptable carrier.

Claim 37 (previously presented): The molecule as claimed in claim 21, wherein the molecule comprises 5 to 7 amino acids.

Claim 38 (previously presented): The molecule as claimed in claim 21, wherein the molecule comprises 6 amino acids.

Claim 39 (previously presented): The molecule as claimed in claim 24, wherein at least 3 of the integers  $x_0$ ,  $x_1$ ,  $x_2$ ,  $x_4$ ,  $x_7$ ,  $x_8$  and  $x_9$  are equal to 1.

Claim 40 (currently amended): The molecule as claimed in claim ~~19~~ 26, wherein  $p$  ranges from 2 to 6.

Claim 41 (currently amended): The molecule as claimed in claim 19 ~~27~~, wherein p ranges from 5 to 19.

Claim 42 (previously presented): The method as claimed in claim 32, wherein the animal is a human.

Claim 43 (currently amended): The method as claimed in ~~of~~ claim 32 ~~33~~, wherein the ~~pathologies associated with aging are chosen from~~ disorder is Alzheimer's disease and Parkinson's disease.

Claim 44 (previously presented): A method for modulating the proteasome of a cell comprising administering the molecule of claim 19 to a cell.

Claim 45 (currently amended): The molecule as claimed ~~claim~~ in claim 19, wherein X<sub>1</sub> and X<sub>3</sub> both represent threonine.